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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/725,373	12/03/2003	Jeffrey Schlom	38163-0197	5890

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OFFICE OF TECHNOLOGY TRANSFER
NATIONAL INSTITUTES OF HEALTH
C/O HELLER EHRMAN WHITE & MCAULIFFE LLP
1717 RHODE ISLAND AVENUE, NW
WASHINGTON, DC 20036-3001

EXAMINER	
DIBRINO, MARIANNE NMN	
ART UNIT	**PAPER NUMBER**
1644	

DATE MAILED: 12/21/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/725,373	SCHLOM ET AL.	
	Examiner	Art Unit	
	DiBrino Marianne	1644	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE ____ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 October 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *47-59* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *47-59* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *10/12/2005*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. Applicant's amendment filed 10/12/05 is acknowledged and has been entered.

2. Claims 47-56 and newly added claims 57-59 read on the elected species, SEQ ID NO: 2, and are currently being examined.

3. It is noted that this application appears to claim subject matter disclosed in prior copending Application No. 09/529,121 and 60/061,589.

A reference to the prior applications must be inserted as the first sentence of the specification of this application if applicant intends to rely on the filing date of the prior application under 35 U.S.C. 119(e) or 120. See 37 CFR 1.78(a). Also, the current status of all nonprovisional parent applications referenced should be included. Applicant should amend the first line of the specification to update the status (and relationship) of the priority documents.

The first sentence of the specification should refer to the provisional application using language such as:
This application claims the benefit of U.S. Provisional Application No. 60/____, filed ____. See MPEP 1302.04. If a statutory reference is included in this statement, if must be to 35 USC 119(e) and not to 35 USC 120.

Although Applicant has submitted an "Amendment to the Specification" on page 2 of Applicant's said amendment, Applicant has not directed where in the specification the addition to the amendment is to be added.

In view of Applicant's amendment filed 10/12/05, the following are new grounds of rejection.

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claims 52-55, 58 and 59 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

This is a new matter rejection.

The amendatory material that is not supported by the specification and claims as originally filed is as follows:

- The kit comprising a vector comprising the nucleic acid molecule of claim 47 and further comprising an immunostimulatory molecule, including GM-CSF. Applicant points to support for the newly filed claims on page 20 at line 1 through page 21, line 26 and in the claims as originally filed.
- A composition comprising a nucleic acid sequence encoding CEA and a nucleic acid sequence encoding one of SEQ ID NO: 2-5.

The originally filed disclosure is to a vector comprising a nucleic acid molecule comprising a nucleic acid sequence encoding a polypeptide comprising an agonist peptide such as one of SEQ ID NO: 1-5, and a nucleic acid molecule encoding at least one class I molecule. Originally filed disclosure is also to a kit comprising an agonist peptide, a vector comprising a nucleic acid sequence encoding CEA, and an immunostimulatory molecule, or to a kit comprising an antagonist peptide alone or in combination with an immunosuppressive agent.

There is no disclosure of a kit comprising a nucleic acid molecule comprising a nucleic acid sequence encoding an agonist peptide, including one further encoding an immunostimulatory molecule such as GM-CSF. There is no disclosure of a composition comprising a nucleic acid sequence encoding CEA *and* a nucleic acid sequence encoding one of SEQ ID NO: 2-5.

Applicant's arguments, of record in the said amendment on pages 6-7, have been fully considered, but are not persuasive.

Applicant's arguments are to the issue of written description, whereas the instant rejection is not written description, but new matter. It is the Examiner's position that the instant rejection stands for the reasons enunciated supra.

6. Claims 47-59 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The specification does not provide adequate written description of the claimed invention. The legal standard for sufficiency of a patent's (or a specification's) written description is whether that description "reasonably conveys to the artisan that the inventor had possession at that time of the. . .claimed subject matter", Vas-Cath, Inc. V. Mahurkar, 19 USPQ2d 1111 (Fed. Cir. 1991). In the instant case, the specification does not convey to the artisan that the Applicant had possession at the time of invention of the claimed nucleic acid molecule, vector, host cell and kit thereof recited in the instant claims or composition comprising a nucleic acid sequence encoding CEA and a nucleic acid sequence encoding, i.e.,

comprising one of SEQ ID NO: 2-5, including wherein the composition or the nucleic acid sequence is capable of stimulating a CEA specific CTL response in a subject.

The instant claims encompass a nucleic acid molecule comprising a nucleic acid sequence encoding an amino acid sequence of one of SEQ ID NO: 2-5, a vector comprising the said nucleic acid molecule, including vectors recited in instant claim 49, and further comprising a nucleotide sequence encoding at least one HLA class I molecule, including HLA-A2, a host cell comprising the said vector, a kit comprising the vector and an immunostimulatory molecule, including GM-CSF, and a composition comprising a nucleic acid sequence encoding CEA and a nucleic acid sequence encoding one of SEQ ID NO: 2-5. There is insufficient disclosure in the specification on such an invention, *i.e.*, one in which the nucleic acid molecule *comprises* a nucleic acid sequence encoding an amino acid sequence that is one of SEQ ID NO: 2-5, vector, host cell and kit thereof, or a composition comprising a nucleic acid sequence encoding CEA and a nucleic acid sequence encoding on of SEQ ID NO: 2-5.

As to the issue of *comprising or comprises*, the specification does not disclose flanking sequences for SEQ ID NO: 2-5, nor nucleic acid molecules that encode SEQ ID NO: 2-5, *i.e.*, the nucleic acid molecules that encode also contain undisclosed flanking sequences, with the exception of sequence encoding at least one HLA class I molecule. The disclosed use for the nucleic acid molecules is in cancer immunotherapy, by inducing a CTL immune response to CEA to the nucleic acid encoded agonist peptides SEQ ID NO: 2-5 (of parental peptide CAP-1 altered at non-MHC anchor residues) that will bind to HLA-A2.1 and elicit an immune response equal to or superior to the parental peptide (especially pages 6-8 at summary of the invention).

The specification does not disclose the definition of "immunostimulatory molecule", but originally filed claim 9 recites wherein the immunostimulatory molecule is selected from the group consisting of IL-2, B7.1, B7.2, ICAM-1, LFA-3, CD72, GM-CSF, TNF-α, IL-12, IL-6 and combinations thereof. The recited IL-2, IL-12, GM-CSF, TNF-α and IL-6 are cytokines, whereas the B7.1 and B7.2 are co-stimulatory molecules, and ICAM-1 and LFA-3 are adhesion molecules.

The art recognizes that for a peptide to be a T cell epitope, the length of the peptide is important for binding to HLA (along with the presence of anchor (or "motif") amino acid residues present within the peptide). The peptides that bind to class I molecules have a predominant length, i.e., a minimum of 8 or 9 amino acid residues for a class I MHC restricted T cell epitope peptide. A primary factor for this is that amino acid residues at the amino- and carboxy-termini of peptides binding to class I molecules interact with conserved amino acid residues in pockets ("A","F") located at opposite ends of the binding groove of the class I molecule, giving rise to a common orientation of the peptides in the binding site (Engelhard at page 14, column 1, lines 16-27.) Thus, the amino acid residues at the peptides' termini make a network of hydrogen bonds with conserved residues on the sides and bottom of the peptide binding groove of class I molecules. These interactions are important for holding the peptides in the binding groove and for stabilizing the complex (Guo, et al at page 366, column 1 lines 1-10.) "...the preferred length (of the peptide) is determined by the minimum amount of peptide required to span the center of the binding site and optimize the interactions at the ends" , but that the predominant length is 9 amino acid residues (Engelhard at page 14, column 1, lines 23-27). The minimum length for a peptide to be a T cell epitope for class II MHC is about 12 amino acid residues (Rammensee et al at page 181, column 2, first full paragraph).

In addition, the art recognizes that flanking sequences influence the processing and presentation of CTL epitopes (Eisenlohr et al, Shastri et al, Bergmann et al, Wang et al, Perkins et al, Theoboald et al and Gileadi et al) and that immunodominance can be affected by the context of the epitope within the protein molecule and that junctional neoepitopes can be created (Perkins et al) or that immunodominant epitopes can be completely silenced by contiguous sequences (Wang et al).

The instant disclosure does not adequately describe the scope of the claimed genus, which encompasses a substantial variety of subgenera, including any nucleic acid molecule *comprising* any nucleic acid sequence encoding a one of SEQ ID NO: 2-5, and a kit further comprising any immunostimulatory molecule of any type, nor the claimed compositions. Since the disclosure fails to provide sufficient relevant identifying characteristics, and because the genus is highly variant, one of skill in the art would reasonably conclude that the disclosure fails to provide a representative number of species to describe the genus as broadly claimed.

Applicant's arguments are of record in the said amendment on pages 7-9, briefly that: the specification discloses embodiments for the claimed nucleic acid sequences on pages 19-20 and discloses expression vectors, the specification provides peptides of varying lengths and with varying flanking regions (*e.g.,* vaccinia virus and avipox) which have been reported to produce CEA specific T cell responses, CEA peptide, vaccinia and avipox CEA, CAP1, CEA fragments

including the CAP1 peptide and a 177 CEA fragment containing the said peptide, that the Federal Circuit has recognized that the filed of immunology is sufficiently advanced so that the description of an antigen, *i.e.,* CEA fragment and CAP1 provide a CEA specific T cell response, is sufficient to provide support for additional embodiments that are not disclosed in an application.

Applicant's arguments have been fully considered, but are not persuasive.

It is the Examiner's position that: the flanking sequences encompassed in the instant claims are not limited to vector sequences, nor to contiguous CEA sequence, but rather, encompass any length and manner of flanking sequence, that the specification only discloses flanking regions from vaccinia or avipox or other vectors or a fragment of CEA contiguous sequence that contains the 9-mer CAP1 antigenic peptide sequence, or are defined 9-mer peptides, that the claims are not limited to the antigen, but to antigen surrounded by undisclosed flanking sequences.

7. Claims 47-59 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for a nucleic acid consisting of a nucleic acid sequence/vector/host cell/kit thereof that encodes a polypeptide that consists of one of SEQ ID NO: 2-5 and optionally at least one HLA class I molecule and/or an immunostimulatory molecule that is one of IL-2, B7.1, B7.2, ICAM-1, LFA-3, CD72, GM-CSF, TNF-α, IL-12, IL-6 and combinations thereof, or a composition comprising a nucleic acid sequence encoding CEA and a nucleic acid sequence encoding an amino acid sequence consisting of one of SEQ ID NO: 2-5, does not reasonably provide enablement for a nucleic acid molecule *comprising* a nucleic acid sequence encoding an amino acid sequence of one of SEQ ID NO: 2-5, a vector comprising the said nucleic acid molecule, including vectors recited in instant claim 49, and further comprising a nucleotide sequence encoding at least one HLA class I molecule, including HLA-A2.1, a host cell comprising the said vector, a kit comprising the vector and an immunostimulatory molecule, including GM-CSF. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention commensurate in scope with these claims.

The specification has not enabled the breadth of the claimed invention because the claims encompass nucleic acid molecules *comprising* a nucleic acid sequence encoding an amino acid sequence that is one of SEQ ID NO: 2-5, or a kit further *comprising* any immunostimulatory molecule, i.e., undisclosed flanking sequences for SEQ ID NO: 2-5 and undisclosed nucleic acid sequences encoding them. The state of the art is such that it is unpredictable in the absence of appropriate evidence whether the claimed nucleic acid molecules, vectors, host cells and kit thereof can be made and/or used.

As to the issue of *comprising*, the specification does not disclose flanking sequences for SEQ ID NO: 2-5, nor nucleic acid molecules that encode polypeptides *comprising* SEQ ID NO: 2-5. The disclosed use for the nucleic acid molecules is in cancer immunotherapy, by inducing a CTL immune response to CEA to the nucleic acid encoded agonist peptides SEQ ID NO: 2-5 (of parental peptide CAP-1 altered at non-MHC anchor residues) that will bind to HLA-A2.1 and elicit an immune response equal to or superior to the parental peptide (especially pages 6-8 at summary of the invention).

The specification does not disclose the definition of "immunostimulatory molecule", but originally filed claim 9 recites wherein the immunostimulatory molecule is selected from the group consisting of IL-2, B7.1, B7.2, ICAM-1, LFA-3, CD72, GM-CSF, TNF-α, IL-12, IL-6 and combinations thereof. The recited IL-2, IL-12, GM-CSF, TNF-α and IL-6 are cytokines, whereas the B7.1 and B7.2 are co-stimulatory molecules, and ICAM-1 and LFA-3 are adhesion molecules.

The specification provides no disclosure and it is unpredictable that peptides SEQ ID NO: 2-5: (1) would be correctly processed and would bind to an MHC molecule when present in a longer peptide of unknown length and flanked by amino acid sequences not present in the antigenic protein of origin, (2) and would be recognized by CTL.

The art recognizes that flanking sequences influence the processing and presentation of CTL epitopes (Eisenlohr et al, Shastri et al, Bergmann et al, Wang et al, Perkins et al, Theoboald et al and Gileadi et al) and that immunodominance can be affected by the context of the epitope within the protein molecule and that junctional neoepitopes can be created (Perkins et al) or that immunodominant epitopes can be completely silenced by contiguous sequences (Wang et al). An undue amount of experimentation would be involved in determining longer peptides from the many possibilities that would be correctly processed, capable of binding to HLA and being recognized by CTL.

The art recognizes that for a peptide to be a T cell epitope, the length of the peptide is important for binding to HLA (along with the presence of anchor (or "motif") amino acid residues present within the peptide). The peptides that bind to class I molecules have a predominant length, i.e., a minimum of 8 or 9 amino acid residues for a class I MHC restricted T cell epitope peptide. A primary factor for this is that amino acid residues at the amino- and carboxy-termini of peptides binding to class I molecules interact with conserved amino acid residues in pockets ("A","F") located at opposite ends of the binding groove of the class I molecule, giving rise to a common orientation of the peptides in the binding site (Engelhard at page 14, column 1, lines 16-27.) Thus, the amino acid residues at the peptides' termini make a network of hydrogen bonds with conserved residues on the sides and bottom of the peptide binding groove of class I molecules. These interactions are important for holding the peptides in the binding groove

and for stabilizing the complex (Guo, et al at page 366, column 1 lines 1-10.) "...the preferred length (of the peptide) is determined by the minimum amount of peptide required to span the center of the binding site and optimize the interactions at the ends" , but that the predominant length is 9 amino acid residues (Engelhard at page 14, column 1, lines 23-27).

There is insufficient guidance in the specification as to how to make and/or use instant invention. Undue experimentation would be required of one skilled in the art to practice the instant invention. See In re Wands 8 USPQ2d 1400 (CAFC 1988).

Applicant's arguments are of record in the said amendment on pages 9-10, briefly that: the arguments applied in the rejection immediately above apply herein, and that the sequence CAP-6D is currently in clinical trials, thus showing the enabling nature of the claimed invention.

Applicant's arguments have been fully considered, but are not persuasive.

It is the Examiner's position that: the Examiner's arguments supra apply herein, and in addition, the evidentiary references speak to the level of unpredictability in the art where flanking sequences are concerned. Also, with regard to Applicant's comments on the clinical trial, the CAP-6D is a defined 9-mer peptide, not a peptide with undisclosed flanking sequences.

8. For the purpose of prior art rejections, the filing date of the instant claims 52-55, 58 and 59 is deemed to be the filing date of the instant application, *i.e.* 12/3/03, as the parent applications do not support the claimed limitations of the instant application. For the purpose of prior art rejections, the filing date of the instant claims 47-51 and 56 is deemed to be the filing date of the 60/061,589 parent application, i.e., 10/10/97.

Applicant's arguments are of record in the said amendment on page 10 at the second full paragraph, and those arguments are put forth to negate the art rejections of record.

Applicant's arguments have been fully considered, but are not persuasive.

It is the Examiner's position that if the instant application is a continuation of the 09/529,121 parent application, then the disclosure is identical, and new matter in the instant case would be new matter in the parent case, and therefore the said parent application does not support the claimed limitations (claims 52-55, 58 and 59) of the instant application. In addition, the 60/061,589 parent case does not support the claimed limitations (claims 52-55, 58 and 59) of the instant application. It is the Examiner's position that the art rejections enunciated below stand.

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

10. Claims 52, 54, 58 and 59 are rejected under 35 U.S.C. 102(e) as being anticipated by US 2004/0019195 A1.

The applied reference has a common inventor with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

US 2004/0019195 A1 discloses a vector comprising a nucleic acid sequence that that encodes a polypeptide comprising the amino acid sequence of at least three costimulatory molecules and further comprises the amino acid sequence of a target antigenic peptide such as the CAP-1D peptide, or YLSGADLNL which is SEQ ID NO: 24 of US 2004/0019195 A1 and SEQ ID NO: 2 of the instant claims. US 2004/0019195 A1 discloses kits containing recombinant vectors comprising the said nucleic acid molecules. US 2004/0019195 A1 discloses a kit for use in making a recombinant poxvirus comprising a plasmid vector that comprises the said nucleic acid sequence. US 2004/0019195 A1 discloses compositions comprising more than one nucleic acid sequence for target antigens such as CEA and CAP-1D (see entire document especially abstract, [0001], [[0021]-[0025], [0029][0037], [0046], [0018], [0011], [0120]-[0121], [0123][0138], [0141], [0146], Table 1, [0157], [0166], claims 1819, 26, 27, 35, 3668, 68-73).

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

12. Claims 52-55, 58 and 59 are rejected under 35 U.S.C. 103(a) as being obvious over US 2004/0019195 A1 in view of US 2005/0101559 A1.

The applied reference has a common inventor with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art only under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 103(a) might be overcome by: (1) a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not an invention "by another"; (2) a showing of a date of invention for the claimed subject matter of the application which corresponds to subject matter disclosed but not claimed in the reference, prior to the effective U.S. filing date of the reference under 37 CFR 1.131; or (3) an oath or declaration under 37 CFR 1.130 stating that the application and reference are currently owned by the same party and that the inventor named in the application is the prior inventor under 35 U.S.C. 104, together with a terminal disclaimer in accordance with 37 CFR 1.321(c). This rejection might also be overcome by showing that the reference is disqualified under 35 U.S.C. 103(c) as prior art in a rejection under 35 U.S.C. 103(a). See MPEP § 706.02(l)(1) and § 706.02(l)(2).

US 2004/0019195 A1 discloses a vector comprising a nucleic acid sequence that that encodes a polypeptide comprising the amino acid sequence of at least three costimulatory molecules and further comprises the amino acid sequence of a target antigenic peptide such as the CAP-1D peptide, or YLSGADLNL which is SEQ ID NO: 24 of US 2004/0019195 A1 and SEQ ID NO: 2 of the instant claims. US 2004/0019195 A1 discloses that the nucleic acid sequence in the vector may also encode a cytokine such as GM-CSF, IL-2 or IL-12, that the costimulatory molecules may be B7.1, B7.2, ICAM-1, LFA-3 and that the vector may be a poxvirus such as orthopox, vaccinia, avipox, suipox or capripox or adenovirus. US 2004/0019195 A1 discloses that host cells may be engineered to express MHC class I molecules for appropriate presentation to CD8+ T cells. US 2004/0019195 A1 discloses kits containing recombinant vectors comprising the said nucleic acid molecules. US 2004/0019195 A1 discloses pharmaceutical compositions comprising the recombinant vectors and additionally comprising exogenously added immunostimulatory molecules such as GM-CSF. US 2004/0019195 A1 discloses a kit for use in making a recombinant poxvirus comprising a plasmid vector that comprises the said nucleic acid sequence. US 2004/0019195 A1 discloses compositions comprising more than one nucleic acid sequence for target antigens such as CEA and CAP-1D (see entire document especially abstract, [0001], [[0021]-[0025], [0029][0037], [0046], [0018], [0011], [0120]-[0121], [0123][0138], [0141], [0146], Table 1, [0157], [0166], claims 1819, 26, 27, 35, 3668, 68-73).

US 2004/0019195 A1 does not disclose wherein the kit includes a protein immunostimulatory molecule such as GM-CSF.

US 2005/0101559 A1 discloses pharmaceutical kits for the treatment of a disorder of a subject, said kits including the nucleic acid to be administered contained in a viral vector dissolved in a pharmaceutically acceptable carrier, and further including other therapeutic agents that may be co-administered with the nucleic acid (especially [0064]).

It would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to have substituted the pharmaceutical composition comprising a vector comprising a nucleic acid molecule encoding the CAP-1D peptide (SEQ ID NO: 2 of the instant claims) along with the immunostimulatory molecule GM-CSF in place of the viral vector comprising a nucleic acid molecule and other therapeutic agents to be co-administered with the nucleic acid molecule in the kit disclosed by US 2005/0101559 A1.

One of ordinary skill in the art at the time the invention was made would have been motivated to do this because it was a well known convention in the art to place these components in a kit for convenience and economy and US 2005/0101559 A1 discloses pharmaceutical kits for the treatment of a disorder of a subject, said kits including the nucleic acid to be administered contained in a viral vector dissolved in a pharmaceutically acceptable carrier, and further including other therapeutic agents that may be co-administered with the nucleic acid and US 2004/0019195 A1 discloses pharmaceutical compositions comprising the recombinant vectors and additionally comprising exogenously added immunostimulatory molecules such as GM-CSF.

13. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington,* 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b). Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

14. Claims 47-49 are provisionally rejected under the judicially created doctrine of double patenting over claims 18, 26 and 27 of copending Application No. 10/406,317. Although the conflicting claims are not identical, they are not patentably distinct from each other because the vector of instant claims 48 and 49 are nucleic acids that comprise the nucleic acid of instant claim 47, and the vector of '317 is also a nucleic acid that comprises a nucleic acid that comprises a nucleic acid sequence encoding SEQ ID NO: 2 of the instant claims (SEQ ID NO: 24 of '317). Also, although the vector of the '317 claims 18, 26 and 27 also comprise additional coding sequences, the claim language of instant claims 47-49 contains the open transitional phrase "comprising". Instant claim 49 is included in this rejection because the poxviruses orthopox, avipox, capripox and suipox are obvious variants of vector as evidenced by claims 11 and 14 of '317.

This is a provisional double patenting rejection since the conflicting claims have not yet been patented.

15. Claims 47-49 are directed to an invention not patentably distinct from claims 18, 26 and 27 of commonly assigned application serial no. 10/406,317, as enunciated at item #16 supra.

16. The U.S. Patent and Trademark Office normally will not institute an interference between applications or a patent and an application of common ownership (see MPEP § 2302). Commonly assigned 10/406,317, discussed above, would form the basis for a rejection of the noted claims under 35 U.S.C. 103(a) if the commonly assigned case qualifies as prior art under 35 U.S.C. 102(e), (f) or (g) and the conflicting inventions were not commonly owned at the time the invention in this application was made. In order for the examiner to resolve this issue, the assignee can, under 35 U.S.C. 103(c) and 37 CFR 1.78(c), either show that the conflicting inventions were commonly owned at the time the invention in this application was made, or name the prior inventor of the conflicting subject matter.

A showing that the inventions were commonly owned at the time the invention in this application was made will preclude a rejection under 35 U.S.C. 103(a) based upon the commonly assigned case as a reference under 35 U.S.C. 102(f) or (g), or 35 U.S.C. 102(e) for applications filed on or after November 29, 1999.

17. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

18. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Marianne DiBrino whose telephone number is 571-272-0842. The Examiner can normally be reached on Monday, Tuesday, Thursday and Friday.

If attempts to reach the examiner by telephone are unsuccessful, the Examiner's supervisor, Christina Y. Chan, can be reached on 571-272-0841. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Marianne DiBrino, Ph.D.
Patent Examiner
Group 1640
Technology Center 1600
December 9, 2005

CHRISTINA CHAN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1600